

**DOE Regulatory Unit Evaluation
of
BNFL Inc.
Integrated Safety Management Plan, Revision 3A**



November 23, 1998

Office of Radiological, Nuclear, and Process
Safety Regulation of TWRS Privatization Contractors

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PREFACE

The Department of Energy's (DOE) Richland Operations Office (RL) issued a request for proposal in February 1996 for privatized processing of waste as part of the Hanford Tank Waste Remediation System (TWRS). Offerors were requested to submit proposals for the initial processing of the tank waste at the Hanford Site. Some of this radioactive waste has been stored in large underground storage tanks at the Site since 1944. Currently, approximately 55 million gallons of waste containing approximately 250,000 metric tons of processed chemicals and 215 million curies of radionuclides are being stored in 177 tanks. These caustic wastes are in the form of liquids, slurries, saltcakes, and sludges. The wastes stored in the tanks are defined as high-level radioactive waste (10 CFR Part 50, Appendix F) and hazardous waste (Resource Conservation and Recovery Act).

Under the privatization concept, DOE intends to purchase waste processing services from a contractor-owned, contractor-operated facility through a fixed-price contract. DOE will provide the waste feedstock to be processed but maintain ownership of the waste. The contractor must: a) provide private financing; b) design the equipment and facility; c) apply for and receive required permits and licenses; d) construct the facility and commission its operation; e) operate the facility to process tank waste according to DOE specifications; and f) deactivate the facility.

The TWRS Privatization Program is divided into two phases, Phase I and Phase II. Phase I is a proof-of-concept/commercial demonstration-scale effort the objectives of which are to a) demonstrate the technical and business viability of using privatized contractors to process Hanford tank waste; b) define and maintain adequate levels of radiological, nuclear, process, and occupational safety; c) maintain environmental protection and compliance; and d) substantially reduce life-cycle costs and time required to process the tank waste. The Phase I effort consists of three parts: Part A, Part B-1, and Part B-2.

Part A is a twenty-month period to establish technical, operational, regulatory, and financial elements necessary for privatized waste processing services at fixed-unit prices. This includes identification by the TWRS Privatization Contractors and approval by DOE of appropriate safety standards, formulation by the Contractors and approval by DOE of integrated safety management plans, and preparation by the Contractors and evaluation by DOE of initial safety assessments. Of the twenty-month period, sixteen months is for the Contractors to develop the Part-A deliverables and four months is for DOE to evaluate the deliverables and determine whether to authorize Contractors to perform Part B. Part A culminated in DOE's authorization on August 24, 1998, of BNFL Inc. to perform Part B.

Part B-1 is a twenty-four month period to a) optimize the waste processing system defined in Part A, b) revise the technical, operational, regulatory, and financial elements established in Part A, c) provide firm fixed-unit prices for the waste processing services, and d) achieve financial closure.

Part B-2 is an eighteen year period to complete design, construction, and permitting of the privatized facilities; provide waste processing services for representative tank wastes at firm fixed-unit prices; and deactivate the facilities. During Part B-2, approximately 10% of the total Hanford tank wastes will be processed.

Phase II will be a full-scale production effort. The objectives of Phase II are to implement the lessons learned from Phase I and to process all remaining tank waste into forms suitable for final disposal.

A key element of the TWRS Privatization Program is DOE's regulation of radiological, nuclear, and process safety through the establishment of a specifically defined regulatory approach and a specifically chartered, dedicated Regulatory Unit (RU) at RL. This regulation is authorized by DOE through the document entitled *Policy for Radiological, Nuclear, and Process Safety Regulation of TWRS Privatization Contractors* (referred to as the Policy) and is implemented through the document entitled *Memorandum of Agreement for the Execution of Radiological, Nuclear, and Process Safety Regulation of the TWRS Privatization Contractors* (referred to as the MOA). The Policy is signed by the Under Secretary of Energy; the Manager, RL; the Assistant Secretary for Environment, Safety and Health (ASEH); and the Assistant Secretary for Environmental Management (ASEM). The MOA is signed by the Manager, RL; the ASEH; and the ASEM. The MOA details certain interactions among RL, the ASEH, and the ASEM as well as their respective roles and responsibilities for implementation of the regulatory approach.

The authority of the RU to regulate the TWRS Privatization Contractor is derived solely from the terms of the TWRS Privatization Contract. Its authority to regulate the Contractor on behalf of DOE is derived from the Policy. The characteristics and scope of this special regulatory approach (special in the sense that it is based on terms of a contract rather than formally promulgated regulations) are delineated in the MOA, the TWRS Privatization Contract, and the following four documents, which are incorporated into the Contract.

Concept of the DOE Regulatory Process for Radiological, Nuclear, and Process Safety for TWRS Privatization Contractors, DOE/RL-96-0005

DOE Regulatory Process for Radiological, Nuclear, and Process Safety for TWRS Privatization Contractors, DOE/RL-96-0003

Top-Level Radiological, Nuclear, and Process Safety Standards and Principles for TWRS Privatization Contractors, DOE/RL-96-0006

Process for Establishing a Set of Radiological, Nuclear, and Process Safety Standards and Requirements for TWRS Privatization, DOE/RL-96-0004

Regulation by the RU in no way replaces any legally established external regulatory authority to regulate in accordance with their duly promulgated regulations nor relieves the Contractor from any obligations to comply with such regulations or to be subject to the enforcement practices contained therein.

In the execution of the regulatory approach through its regulatory program, DOE expects the RU to consider not only the relevant approaches and practices of DOE but also those of the Nuclear Regulatory Commission (NRC). The Policy states that

"It is DOE's policy that TWRS privatized contractor activities be regulated in a manner that assures adequate radiological, nuclear, and process safety by application of regulatory concepts and principles consistent with those of the Nuclear Regulatory Commission."

To this end, the RU interacts with the NRC (under the provisions of a memorandum of understanding with the NRC) during development of regulatory guidance and during execution of the regulatory program to ensure implementation of this policy.

All documents issued by the Office of Radiological, Nuclear, and Process Safety Regulation of TWRS-P Contractors are available to the public for review at DOE/RL Public Reading Room at the Washington State University, Tri-Cities Campus, 2770 University Dr., Richland, Washington. Copies may be purchased for a duplication fee.

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EXECUTIVE SUMMARY

This Evaluation Report (RL/REG-98-19, Revision 1, November 1998) documents the Regulatory Unit (RU) evaluation of BNFL Inc. Integrated Safety Management Plan (ISMP), Revision 3A that BNFL submitted on November 6, 1998. BNFL submitted ISMP Revision 3A to address the conditions of approval established in *DOE Regulatory Unit Evaluation Report of BNFL Inc. Integrated Safety Management Plan, Revision 0* (RL/REG-98-03), and to address commitments made to the RU during the review of ISMP Revision 0, 2 and 3. The reviewers assessed this submittal using *Guidance for the Review of TWRS Privatization Contractor Integrated Safety Management Plan Submittal Package* (RL/REG-97-07).

The initial evaluation of ISMP Revision 3 (RL/REG-98-19, Revision 0) determined that four of the six conditions of approval of RL/REG-98-03 were not met and eight commitments made during the RU review of ISMP Revision 0 were not met. Section 2 of the body of this report identifies the actions that were required to meet the remaining conditions of approval and Section 3 identifies the required actions to meet the remaining commitments. Section 4 of the body of this evaluation identifies miscellaneous typographical errors and points of clarification related to ISMP Revision 3. Appendix A presents the RU's evaluation of BNFL ISMP Revision 3A.

The RU concluded ISMP Revision 3A is acceptable and has met all conditions for approval. As approved, the RU now considers the ISMP to be a part of the BNFL TWRS-P Authorization Basis.

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1.0 INTRODUCTION

This report documents:

1. The *DOE Regulatory Unit (RU) Evaluation of the BNFL Integrated Safety Management Plan (ISMP), Revision 3* (BNFL-5193-ISP-01, July 1, 1998) which was submitted on July 7, 1998. This evaluation (RL/REG-98-19) is reproduced in Sections 2, 3, and 4 of the body of this report for the reader's convenience. ISMP Revision 3 incorporates changes derived from the following sources: responses to RU review questions from the review of ISMP Revision 0; responses to conditions established in DOE RU Evaluation Report of the BNFL Inc. Integrated Safety Management Plan (RL/REG-98-03, Revision 0, March 1998); and responses to actions required in DOE RU Comments on the BNFL Inc. Integrated Safety Management Plan, Revision 2, May 1998.

Section 2 summarizes the RU evaluation of changes in ISMP Revision 3 intended to meet the six conditions of approval of RL/REG-98-03 and identifies the additional actions required to meet the condition. Section 3 summarizes the RU evaluation of changes intended to meet commitments made during the RU review of ISMP Revision 0 and identifies the additional actions required to meet the commitment. Section 4 identifies miscellaneous editorial errors.

2. The RU evaluation of ISMP Revision 3A, as reported in Appendix A of this document, was submitted November 6, 1998. Appendix A mirrors the organization of the body of the report to enable tracking of each issue to resolution.

2.0 EVALUATION OF CHANGES INTENDED TO MEET CONDITIONS OF APPROVAL

This Section is a verbatim reproduction of Section 2 of the *DOE Regulatory Unit (RU) Evaluation of the BNFL Integrated Safety Management Plan (ISMP), Revision 3* (BNFL-5193-ISP-01, July 1, 1998) which was submitted on July 7, 1998.

Six conditions for approval were established in the RU Evaluation Report of the BNFL Integrated Safety Management Plan Revision 0 (RL/REG-98-03). Each condition of approval, evaluation summary of the BNFL change in ISMP Revision 3 to satisfy the condition, acceptance status and action required for acceptance is described below. Prior to commencement of preliminary design, BNFL must meet all conditions of approval.

2.1 Condition of Approval 1

BNFL shall revise the ISMP to incorporate modifications committed to by BNFL in its responses to the RU's questions during review of the SA Package.

Evaluation Summary

ISMP Revision 3 did not adequately incorporate commitments made in RU Questions 73 and 77

associated with BNFL ISMP Revision 0 (see Section 3.2 (b) and 3.2 (c) of this document).

ISMP Revision 3, Sections 3.3.1.5 and 3.5, which incorporated Question 73, have been revised in a manner that no longer addresses the BNFL commitment made in response to Question 73. This commitment, to apply DOE/RW-0333P to all activities associated with HLW activities from design through production and acceptance, has been removed.

ISMP Revision 3, Section 3.3.3, which incorporated Question 77, has been revised in a manner that changes the commitment for the RU to review and approve changes to the QA Plan 30 days prior to implementation.

Status - Condition of approval is not met.

Action Required to Meet Condition of Approval

1. Revise the ISMP to apply DOE/RW-0333P to all activities associated with HLW activities from design through production and acceptance.
2. Revise the ISMP to require RU review and approval of changes to the QA Plan 30 days prior to implementation.

2.2 Condition of Approval 2

BNFL shall revise Section 3.3 of the ISMP to clearly describe an authorization basis management process that conforms to the RU position described in RL/REG-97-13, Regulatory Unit Position on Contractor-Initiated Changes to the Authorization Basis.¹ (ISMP Evaluation Report Section 3.2.2.3 "Authorization Basis").

Evaluation Summary

ISMP Section 3.3, specifically Section 3.3.3.1, does not adequately incorporate the authorization basis management process as described in *RL/REG-97-13, Regulatory Unit Position on Contractor-Initiated Changes to the Authorization Basis* (see Section 3.2 (d) of this document).

Status - Condition of approval is not met.

Action Required to Meet Condition of Approval - Revise the ISMP to adequately incorporate the authorization basis management process as described in *RL/REG-97-13, Regulatory Unit Position on Contractor-Initiated Changes to the Authorization Basis*.

2.3 Condition of Approval 3

BNFL shall submit a revised Quality Assurance Plan (QAP) for RU review and approval. (ISMP Evaluation Report Section 3.1.3, "10 CFR 830.120 Evaluation").

¹Regulatory Unit Position on Contractor-Initiated Changes to the Authorization Basis, RL/REG-97-13, Revision 3, U.S. Department of Energy, Richland Operations Office, Office of Radiological, Nuclear, and Process Safety Regulation, Richland, Washington, December 1997.

Evaluation Summary

BNFL submitted a revised QA Plan and the RU approved the QA Plan in June 1998.

Status - Condition of approval is met.

2.4 Condition of Approval 4

BNFL shall submit a schedule, including specific dates, for safety-related activities. (ISMP Evaluation Report Section 3.8, "Scheduling of Safety Related Activities").

Evaluation Summary

BNFL did not provide a schedule in the ISMP that included specific dates for safety deliverables (see Section 3.3 (a) of this document).

Status - Condition of approval is not met.

Action Required to Meet Condition of Approval - Incorporate a schedule in the ISMP that includes specific dates for safety deliverables up to and including Authorization for Deactivation.

2.5 Condition of Approval 5

BNFL shall modify the ISMP to provide a description of their plans to implement defense in depth. (ISMP Evaluation Report Section 3.2.2.1, "Defense-in-Depth"; see also DOE/RL-98-09).

Evaluation Summary

While BNFL improved ISMP Section 3.1, "Defense in Depth," this section does not yet provide adequate implementing detail. ISMP Revision 3 contains insufficient implementing detail for a design engineer to adequately apply this principle. BNFL did not address some RU comments to ISMP Revision 2 (see Section 3.2 (a) of this document).

Status – Condition of approval is not met.

Action Required to Meet Condition of Approval - Revise Section 3.1 of the ISMP to provide adequate implementing detail for the six sub-principles of defense in depth.

2.6 Condition of Approval 6

BNFL shall revise the ISMP to either (1) indicate that BNFL Inc. accepts ultimate responsibility for safety, or (2) clarify that the General Manager's ultimate responsibility for safety is equivalent to the Contractor's responsibility (ISMP Evaluation Report Section 3.2.2.2, "Safety Responsibility" and Section 3.2.3.1.3, "Process Safety Responsibility").

Evaluation Summary

BNFL revised ISMP Section 3.2, "Safety Responsibility," to state, "The ultimate responsibility for safety of the TWRS-P Project rests with BNFL Inc. and with the General Manager." This change adequately describes safety responsibility.

Status – Condition of approval is met.

3.0 EVALUATION OF CHANGES INTENDED TO MEET PREVIOUS ISMP COMMITMENTS

This Section is a verbatim reproduction of Section 3 of the *DOE Regulatory Unit (RU) Evaluation of the BNFL Integrated Safety Management Plan (ISMP), Revision 3* (BNFL-5193-ISP-01, July 1, 1998) which was submitted on July 7, 1998.

The following subsections provide evaluations of ISMP Revision 3 implementation of a variety of BNFL commitments made during the review of ISMP Revisions 0 and 2². If the resolution of the commitment remains unacceptable the rationale is explained. The subsections are presented by ISMP-related section. Prior to commencement of preliminary design, BNFL must meet the remaining commitments.

3.1 ISMP SECTION 1 – SAFETY APPROACH TO TWRS PRIVATIZATION

a. Acceptable Level of Public Safety (Section 1.3.7)

Evaluation

Section 1.3.7 of ISMP Revision 3 states:

"If credit is taken for operator action to satisfy the public radiological exposure standards of Table 1-2, adequate radiation protection is provided to permit access and occupancy of the control room or other control locations under accident conditions without personnel receiving radiation exposures in excess of 5 rem whole body gamma and 30 rem beta skin for the duration of the accident."

BNFL provided insufficient justification to support the dose values selected for Control Room Personnel.

Required Action

BNFL must provide adequate justification to support the dose values for Control Room Personnel.

² Revision 1 was not separately reviewed, but was subsumed in the Review of Revision 2.

b. Configuration Management (Section 1.3.16)

Evaluation

The RU evaluation of ISMP Revision 2, required³ that BNFL identify approval responsibilities related to Table 1-4 and whether these approval officials are the same as those identified in the QAPIP.

The ISMP material related to Approval Responsibilities is partially acceptable because the indented paragraph 3) entitled “Approval” within Section 1.3.16 of the Revision 3 ISMP has been expanded to describe the configuration management responsibilities for approval. However, approval authority for changes to Safety Design Significant features was not identified.

Required Action

BNFL must modify paragraph 3) to identify the approval authority for changes to Safety Design Significant features.

3.2 ISMP SECTION 3 – CONFORMANCE TO TOP-LEVEL SAFETY STANDARDS AND PRINCIPLES

a. Defense in Depth (Section 3.1)

Evaluation

The RU reviewers noted improvements in the presentation of defense in depth in Revision 3 of the ISMP. However, collectively the ISMP Revision 3 and the SRD Revision 1 do not provide sufficient implementing detail for a user, like a design engineer, to successfully implement the Top-Level Principle of Defense in Depth.

The RU evaluations of SRD Revision 0 and ISMP Revision 0 each identified conditions of approval for defense in depth. The SRD Evaluation Report condition of approval stated

“...BNFL must modify the SRD to include subordinate standards for all the safety criteria associated with defense in depth with the exception of SC 4.3-1 [Automatic Systems].”

Subordinate Codes and Standards that describe in more detail implementing standards for the Defense in Depth principles of prevention, control, mitigation, and human aspects are required.

The ISMP evaluation report identified the following as a condition of approval, “modify the ISMP to provide a description of their plans to implement defense in depth.”

The Nuclear Safety Principle of Defense in Depth consists of the following six sub-principles: defense in depth, prevention, control, mitigation, automatic systems, and human aspects. In Revision 1 of the SRD, because BNFL elected to intersperse their ad hoc subordinate safety standards for the above six sub-principles with the program description in the ISMP, changes to

³ Letter from D. Clark Gibbs, Regulatory Official to Mr. Maurice Bullock, 98-0173, dated May 29, 1998, Enclosure 2; DOE Regulatory Unit Comments on the BNFL Integrated Safety Management Plan, Revision 2, May 28, 1998.

both the ISMP and SRD are needed to provide adequate implementing detail.

ISMP Revision 3, Section 3.1.1 (Approach to Defense in Depth) defines Defense in Depth as “...no one layer of protection is completely relied on to ensure safe operation of the facility.” In contrast, the definition of Defense in Depth in the Contract is “...several layers of protection including successive barriers preventing the release of radioactive materials to the workplace or environment.” Therefore, BNFL’s working definition of the term is narrower than the Contract’s.

In ISMP Revision 3, BNFL revised Section 3.1.1 “Approach to Defense in Depth” and added Section 3.1.2 “Implementation of Defense in Depth” in response to the RU Evaluation Report finding that the method for implementing Defense in Depth was not acceptably described in the ISMP. ISMP Revision 3 provides an improved discussion of the implementation approach for defense in depth, but remains insufficient for a design engineer to adequately implement. The specifics needed to successfully implement the concept continue to be absent from these documents. For example, what criteria does the designer use to determine the number of layers of protection required for a specific hazard?

Subordinate Safety Standards that describe in more detail implementing plans for the Defense in Depth principles of prevention, control, mitigation, automatic systems, and human aspects are identified as specific sections of ISMP Revision 3. The association of a specific Top-Level Principle with distinct Safety Criteria is provided in Attachment E to SRD Revision 1, Volume 1 (pages E-10 and E-11). Volume II of the SRD then identifies the implementing standards associated with each Safety Criterion. Table 1, below, shows the Subordinate Safety Standards for each Top-Level Principle. Standards that have been added in SRD Revision 1 are highlighted.

Table 1, Subordinate Safety Standards for Defense in Depth

DOE/RL-96-0006 Principle	Related Safety Criteria	Subordinate Standards
4.1.1.1 Defense in Depth	1.0-7	ISMP – 3.1, IEEE 1023-88
	4.1-1	ISMP – 3.6, 3.1, 3.7, 3.6.3, 3.6.2, 3.6.1
4.1.1.2 Prevention	1.0-2	ISMP – 3.11, 3.7, 3.6, 3.1, 1.3.5
	4.1-1	ISMP – 3.6, 3.1, 3.7, 3.6.3, 3.6.2, 3.6
4.1.1.3 Control	7.0-2	ISMP – 3.1
4.1.1.4 Mitigation	4.2-1	ISMP – 1.3.10, 3.6, 3.7, 3.9
4.1.1.5 Automatic Systems	4.3-1	IEEE 603-1991 ISA 84.01-96
4.1.1.6 Human Aspects	4.3-6	IEEE 1023-88, ISMP 3.12
	7.3-2	ISMP 1.3-9

In referring to multiple sections of the ISMP as subordinate safety standards and not specifying which portions of those sections pertain to the specific Top-Level Principle little insight is afforded the end-user in exactly how to implement the Principle. While each of these ISMP sections touch on aspects of the six sub-principles, it is impossible to weave these fragments together in a coherent discussion of how to implement defense in depth. Therefore, as presented in the ISMP, the subordinate safety standards shown in Table 1 are not acceptable for use in design.

In summary, the ISMP material related to Defense in Depth requires additional detail that presents clear, concise implementing safety standards so that the end user can effectively and unambiguously implement the Top-Level Principles of Defense in Depth.

Required Action

BNFL must revise the ISMP to provide adequate implementing detail. The detail must present clear, concise implementing safety standards so that the end user can effectively and unambiguously implement the Top-Level Principles of Defense in Depth.

b. Quality Assurance (QA) Program (Section 3.3.1.5)

1. ISMP and QA Program Implementation Plan (QAPIP) Inconsistency

Evaluation

The first sentence of ISMP Section 3.3.1.5 states: “The QA Program is the program required by 10 CFR 830.120, ‘Quality Assurance Requirements.’” The first paragraph of Section 1.2 of the Revision 4 BNFL QA Program Implementation Plan (QAPIP) states: “The QA Program is organized to meet the requirements of 10 CFR 830.120, principles stipulated in DOE/RL-96-0006, BNFL Inc. quality policies, specific contract requirements, and the intent of *Implementation Guide for Use with 10 CFR 830.120, Quality Assurance* (G-830.120, Revision 0).” The ISMP is inconsistent with the approved QAPIP because the ISMP is considerably more limiting with respect to describing the coverage of the QA Program in terms of the QA requirements that it meets.

Required Action

Revise the ISMP to be consistent with the QAPIP.

2. Application of DOE/RW-0333P to HLW Services

Evaluation

In response to Section 3.2.2.4 of RL/REG-98-03⁴ and SA Package Question 73, BNFL

⁴ DOE Regulatory Unit Evaluation Report of the BNFL Inc. Integrated Safety Management Plan, RL/REG-98-03, March, 1998.

committed to applying DOE/RW-0333P, *Quality Assurance Requirements and Descriptions for the Civilian Radioactive Waste Management Program (QARD)* (DOE 1995b), to all activities associated with HLW services from design through production and acceptance. Sections 3.3.1.5 and 3.5 of the Revision 3 ISMP have been revised in a manner that fails to address this commitment:

- BNFL deleted the statement that was in Section 3.3.1.5 of the Revision 2 ISMP, which indicated that DOE/RW-0333P “applies to all HLW activities (i.e., design through production and acceptance).” Instead, Section 3.3.1.5 of the Revision 3 ISMP only states that the QA Program shall “comply with the applicable elements” of DOE/RW-0333P.

Instead of revising the wording of Section 3.5 to state that DOE/RW-0333P will be applied to all activities associated with HLW services from design through production and acceptance, BNFL changed Section 3.5 of the Revision 3 ISMP to indicate that compliance with DOE/RW-0333P is addressed in ISMP Section 3.3.1.5.

Required Action

BNFL must, prior to commencing preliminary design, revise the wording of Section 3.3.1.5 and/or Section 3.5 to clearly state that the TWRS-P Project will apply DOE/RW-0333P to all activities associated with high-level waste services from design through production and acceptance.

c. Changes to the Authorization Basis (Section 3.3.3)

1) RU Review of Changes to the QA Program Implementation Plan

Evaluation

In response to SA Package Question 77, BNFL stated: “Changes to the QA Program that affect commitments specified in a previously approved QA Program shall be submitted to the RU for review and approval 30 days prior to the implementation of subject changes.” The approved QAPIP addresses this commitment through the following statement: “Changes to the QA Program and Implementation Plan that affect commitments specified in a previously approved QA Program and Implementation Plan shall be submitted to the RU for review and approval 30 days before the implementation of subject changes.” BNFL agreed to correct this shortcoming within the Revision 3 ISMP after the RU identified the issue in the review of ISMP Revision 2.

The sections of ISMP Revision 3 related to the RU Review of Substantive Changes to the QAPIP is partially acceptable because:

- The wording of the second paragraph of Section 3.3.3 within the Revision 3 ISMP substantially addressed the BNFL commitment made in response to SA Package Question 77, but it inadequately referenced that changes to the previously

approved QA Program are to be submitted to the RU for review and approval.

- The wording of Section 3.3.3.1 (Changes Prior to Issuance of the Operating Authorization) within the Revision 3 ISMP is confusing and misleading with respect to adequately addressing the BNFL commitment made in response to SA Package Question 77. This section states, in part:

“ . . . changes to safety documentation are made as follows: 3) QAP - The regulator receives annual updates of the QAP, if changes were made.”

- The wording of Section 3.3.3.2 (Changes After Issuance of the Operating Authorization) within the Revision 3 ISMP is fragmented, confusing, and misleading with respect to adequately addressing the BNFL commitment made in response to SA Package Question 77. This section states, in part:

“Annual updates to the QAP must also identify the changes, the reason for the changes, and the justification for concluding that the revised QAP continues to satisfy the requirements of 10 CFR 830.120, ‘Quality Assurance Requirements.’”

Required Action

BNFL must, prior to commencing preliminary design, edit ISMP Revision 3 as follows:

“By 10 CFR 830.120(b)(3), a contractor may, at any time, make changes to the approved QAP so long as the QAP, as changed, will continue to satisfy the requirements of 10 CFR 830.120. For the TWRS-P Project the commitment has been made that changes to a previously approved QAP will be submitted to the RU for review and approval 30 days prior to the implementation of the subject changes. Annual updates to the QAP must identify the changes, the pages affected, the reason for the changes, and the basis for concluding that the revised QAP continues to satisfy the requirements of 10 CFR 830.120.”

BNFL must, prior to commencing preliminary design, revise Section 3.3.3.1 and 3.3.3.2 to restate or specifically reference the tighter controls over the RU approval of changes to the QAP contained in the second paragraph of Section 3.3.3.

2. Changes Prior to Issuance of the Operating Authorization (Section 3.3.3.1)

Evaluation

ISMP Revision 3, Section 3.3.3, addresses BNFL initiated changes to the authorization basis. DOE/RL-97-13 describes the RU position on changes to the Authorization Basis and is incorporated by reference into the Contract. Accordingly, the reviewers evaluated Section 3.3.3 of ISMP Revision 3 for conformance with RL/REG-97-13 and found that Section 3.3.3 conforms to DOE/RL-97-13 with the exception of subsection 3.3.3.1.

Section 3.3.3.1 is inconsistent with the RU position regarding changes to the Authorization Basis as described in RL/REG-97-13. Section 3.3.3.1 proposed separate approaches to Authorization Basis changes for different phases of the TWRS-P project. Separate approaches are described for changes to the Authorization Basis 1) prior to Construction Authorization, 2) between Construction Authorization and Operations Authorization, and 3) following Operations Authorization. These different approaches result in limiting the applicability of relevant commitments to certain elements of the Authorization Basis (e.g., ISMP and SRD only up to Construction Authorization) and introduce different safety evaluation criteria for regulatory involvement in the change process (e.g., changes that are evaluated by BNFL to result in "a decrease in commitment to worker or public safety" for the period prior to Construction Authorization).

Section 3.3.3.1 is also inconsistent with BNFL's latest letter (W338-98-0116 dated July 1, 1998) regarding BNFL proposals for changes to DOE/RL-97-13.

Required Action

BNFL must, prior to commencing preliminary design, revise the ISMP to describe a management process for implementing BNFL-initiated changes to the Authorization Basis that is consistent with DOE/RL-97-13.

3.3 ISMP SECTION 9 – SCHEDULING OF SAFETY-RELATED ACTIVITIES

a. Scheduling of Safety-Related Activities (Section 9.1)

Evaluation

The RU Evaluation Report for ISMP Revision 0 states⁵:

“BNFL shall submit a schedule, including specific dates, for safety related activities. (Section 3.8, “Scheduling of Safety Related Activities”)”

BNFL revised Section 9.1 of ISMP Revision 3 to include a commitment⁶ by BNFL to provide a “schedule addressing Figures 2, 5, 6, and 7 of *DOE/RL-96-0003, DOE Regulatory Process for Radiological, Nuclear and Process Safety for TWRS Privatization Contractors*...when available.” In a meeting held between the RU and BNFL on May 19, 1998, BNFL committed to provide a schedule, including dates, as soon as it becomes available. BNFL provided the RU a “Preliminary Schedule for Planned Regulatory Deliverables through Issuance of the Construction Authorization Request⁷” on August 17, 1998.

⁵ DOE Regulatory Unit Evaluation Report of the BNFL Inc. Integrated Safety Management Plan, RL/REG-98-03, March, 1998, pg vii.

⁶ This commitment was first made in “DOE Regulatory Unit Comments on the BNFL Inc. Integrated Safety Management Plan, Revision 2,” (May 28, 1998)

⁷ Letter from Donald W. Edwards to D. Clark Gibbs, W338-98-0175, dated August 17, 1998, BNFL Inc. Schedule for Planned Regulatory Deliverables

The material provided is unacceptable because only the period up to the CAR is addressed. The Contract requires that the schedule span the period up to and including the Authorization for Deactivation.

Required Action

BNFL must, prior to commencing preliminary design, incorporate a schedule in the ISMP that includes specific dates for safety deliverables up to and including Authorization for Deactivation.

3.4 ISMP SECTION 10 – ASSESSMENTS

- a. Support of the RU’s Inspection and Corrective Action/Enforcement Action Programs (Section 10.4)

Evaluation

ISMP Section 10.4 is a new section added to both ISMP Revisions 2 and 3. The second paragraph of Section 10.4.1 states, in part: “Consistent with the nature of the fixed-priced contract, the RU inspection program is executed in a planned, disciplined, and predicable manner that includes a defined limit on the number of inspectors per visit and the number of inspections per year.” (Emphasis added). The RU does not have arbitrary limits placed on it regarding the number of inspectors they are allowed to have per visit or the number of inspections allowed per year. For example, poor performance by BNFL may warrant greater scrutiny on the part of the RU that will necessitate exceeding any predetermined estimates. The ISMP material related to inspection program limits is unacceptable because the second paragraph of Section 10.4.1 proposes limits the RU Inspection Program that are incorrect.

Required Action

BNFL must, prior to commencing preliminary design, revise the wording of this section to delete the restrictions on the number of RU inspectors per visit and the number of RU inspections per year.

3.5 ISMP SECTION 11 – ORGANIZATION ROLES, RESPONSIBILITIES AND AUTHORITIES

- a. Organization Roles, Responsibilities and Authorities (Section 11.0)

Evaluation

DOE/RL-96-0003 states that: *“The approval of the Contractor’s ISMP will be issued upon determination by the Director of the Regulatory Unit that: ... Safety definition, implementation, and maintenance roles, responsibilities, and authorities defined in the ISMP are clear and appropriate.”*

In the ISMP Revision 3, p 11-4, the roles of the LPS⁸ Organization include: “Interfacing with regulators, stakeholders and Hanford Site contractors on ES&H matters” and “Evaluating proposed changes that involve implementation of ...environmental matters” and oversight “activities related to...environmental protection.” However, unlike the Radiation Protection Program, there is no indication of who is responsible for the ERPP in Section 11.0 of the ISMP, or in the SRD. The material related to Organization Roles, Responsibilities and Authorities is unacceptable because responsibility for the ERPP is not defined.

Required Action

BNFL must, prior to commencing preliminary design, modify the ISMP to define the roles, responsibilities, and authorities for the ERPP.

4.0 COMMENTS

This Section is a verbatim reproduction of Section 4 of the *DOE Regulatory Unit (RU) Evaluation of the BNFL Integrated Safety Management Plan (ISMP), Revision 3* (BNFL-5193-ISP-01, July 1, 1998) which was submitted on July 7, 1998.

The comments below address typographical errors, points of clarification, etc. Reviewers made no attempt to extensively proofread the document; these items were simply noticed during the review.

Table 1-3: First Bullet, “Remarks” Column Under “3. Quality Improvement: “(QL)-3” should be “”QL-3.”

Two Paragraphs Preceding Table 1-4: These two paragraphs (“Personnel responsible for performing . . . are identified in Table 1-4”) were added to Section 1.3.16 of the Revision 3 ISMP but were not marked with change bars in the margin.

Section 1.3.18: Add “the emergency management plan is fully implemented before the introduction of hazardous chemicals into the TWRS-P Facility.”

First Paragraph of Section 2.5: Delete the comma after training of the first paragraph of Section 2.5 (i.e., “. . . contained within the regulation, training, and procedures will . . .” should be “. . . contained within the regulation, training and procedures will . . .”).

Section 3.3.1.4: There is a typographical error. Reference to Safety Criterion 9.0-3 should be revised to 9.2-3.

Third Paragraph of Section 3.3.3: It seems as though several words are missing as follows: “As allowed by 10 CFR 835.101(I) BNFL Inc. may make changes to the approved RPP so long as the change . . .”

⁸ Licensing, Permitting, and Safety

Last Paragraph of Section 3.6.3: The last paragraph of Section 3.6.3 states: “A specific list of SSCs credited for worker and public protection is provided in ISAR Section 4.8, ‘Controls for the Prevention and Mitigation of Accidents.’” The development and refinement of this list is an iterative process rather than a single step process. BNFL should state the frequency or selected milestone points for revision of this list of SSCs.

Paragraph 5 of Section 3.12: The last two words appearing in paragraph 5, "complete safety" should be revised to read "completed safely."

Section 3.16.1.2: Section 3.16.1.2 states in part: “The PSC is also responsible for the reviewing and recommending approval to the General Manager for the following safety related documents: . . . 7) Audit and assessment reports.” To ensure adequate independence of BNFL’s oversight groups, reports of audits and assessments conducted by the TWRS-P QA/other organizations should not be dependent upon review by the PSC or approval by the General Manager.

Section 5.1: Delete ‘highly’ in phrase highly hazardous chemicals

Section 5.6.4: It seems as though a word is missing from the first sentence as follows: “Prior to operation of the TWRS-P Facility with radioactive materials and chemicals considered to pose a hazard, startup tests”

Section 5.6.8: The correct call out for the regulation entitled “Employee Emergency Plans and Fire Protection” is 29 CFR 1910.38 (not 29 CFR 1910.119).

Section 8.0: The first paragraph in Chapter 8.0 refers to BNFL 1997a, *Tank Waste System Privatization Project Quality Assurance Program*. This document has been superseded by BNFL 1998c, *TWRS-P Privatization Project: Quality Assurance Program and Implementation Plan*, and the reference must be changed accordingly before the start of Part B.

Section 9.2: Change “are” to “will be” in the third paragraph of Section 9.2 (i.e., “Revisions to the Quality Assurance Program and its implementation plan ~~are~~ will be submitted to the RU 60 days before the beginning of construction, operation, and deactivation.”)

Definitions: The definition of “requirements” within the Revision 3 ISMP has a typographical error in that “stature” should be “statute.”

Appendix A, RU REVIEW OF BNFL RESPONSES TO RL/REG/98-19, REVISION 0

This Appendix describes the RU evaluation of ISMP Revision 3A.

1.0 EVALUATION OF CHANGES intended TO meet CONDITIONS OF APPROVAL

Six conditions for approval were established in the RU Evaluation Report of the BNFL Integrated Safety Management Plan, Revision 0 (RL/REG-98-03). Each condition of approval, action required for acceptance, and RU evaluation is described below. Prior to commencement of preliminary design, BNFL must meet all conditions of approval.

1.1 CONDITION OF APPROVAL 1

BNFL shall revise the ISMP to incorporate modifications committed to by BNFL in its responses to the RU's questions during review of the SA Package.

Action Required to Meet Condition of Approval

- 1) Revise the ISMP to apply DOE/RW-0333P to all activities associated with HLW activities from design through production and acceptance.
- 2) Revise the ISMP to require RU review and approval of changes to the QA Plan 30 days prior to implementation.

Summary of BNFL Response

Action 1) – BNFL revised ISMP Section 3.3.1.5 and Section 3.5 as follows: “The provisions of the Quality Assurance Requirements and Description document DOE/RW/0333P will be applied to QL 1 and 2 items and activities associated with HLW services from design through production and acceptance.”

Action 2) - BNFL proposed revisions to ISMP page 3-10. The proposed revision to ISMP Section 3.3.3 states that: “These annual updates are also subject to the 30-day prior review by the Regulatory Unit.”

Evaluation

Required Action 1) - The RU reviewers determined that this revision was adequate to meet this condition for approval.

Required Action 2) - The RU reviewers determined that this revision was adequate to meet this condition for approval.

1.2 CONDITION OF APPROVAL 2

BNFL shall revise Section 3.3 of the ISMP to clearly describe an authorization basis management process that conforms to the RU position described in RL/REG-97-13, Regulatory Unit Position on Contractor-Initiated Changes to the Authorization Basis.⁹ (ISMP Evaluation Report Section 3.2.2.3 “Authorization Basis”).

Action Required to Meet Condition of Approval - Revise the ISMP to adequately incorporate the authorization basis management process as described in *RL/REG-97-13, Regulatory Unit Position on Contractor-Initiated Changes to the Authorization Basis*.

BNFL must, prior to commencing preliminary design, revise the ISMP to describe a management process for implementing BNFL-initiated changes to the Authorization Basis that is consistent with DOE/RL-97-13.

Summary of BNFL Response

BNFL proposed to delete ISMP Sections 3.3.3.1 and 3.3.3.2 and to add an insert into section 3.3.3 in order to define the terms “commitment” and “effectiveness” as used in RL/REG-97-13. BNFL also proposed to revise SC 3.1.7, SC 9.1-4, and SC 9.2-5 to refer to ISMP Section 3.3.3 as an implementing standard rather than Section 3.3.3.2.

Evaluation

BNFL revised ISMP Section 3.3.3 to state:

“In accordance with Regulatory Unit Position on Contractor Initiated Changes to the Authorization Basis, RL/REG-97-13”

and Sections 3.3.3.1 and 3.3.3.2 of ISMP Revision 3 were removed to resolve the conflict with RL/REG-97-13.

The proposed addition of Insert A into Section 3.3.3 defining “commitment” and “effectiveness” was not accepted by the RU reviewers and subsequently BNFL withdrew this proposed revision.

The RU reviewers determined these changes were adequate to resolve this condition for approval.

⁹*Regulatory Unit Position on Contractor-Initiated Changes to the Authorization Basis*, RL/REG-97-13, Revision 3, U.S. Department of Energy, Richland Operations Office, Office of Radiological, Nuclear, and Process Safety Regulation, Richland, Washington, December 1997.

1.3 CONDITION OF APPROVAL 3

BNFL shall submit a revised Quality Assurance Plan (QAP) for RU review and approval. (ISMP Evaluation Report Section 3.1.3, “10 CFR 830.120 Evaluation”).

Evaluation – This condition of approval was met in ISMP Revision 3

1.4 CONDITION OF APPROVAL 4

BNFL shall submit a schedule, including specific dates, for safety-related activities. (ISMP Evaluation Report Section 3.8, “Scheduling of Safety Related Activities”).

Action Required to Meet Condition of Approval - Incorporate a schedule in the ISMP that includes specific dates for safety deliverables up to and including Authorization for Deactivation.

Summary of BNFL Response

BNFL provided the dates required by issuance of a letter (BNFL Letter dated November 4, 1998 Donald W. Edwards to D. Clark Gibbs. “TWRS-P Contract No DE-AC06-96RL13308 – W375 – Schedule for Planned Regulatory Deliverables”). Also, Section 9.2 will be revised to reflect submittal of the QAP as part of the Standards Approval Package.

Evaluation

The RU reviewers determined that the schedule provided by BNFL was adequate to resolve this condition for approval.

1.5 CONDITION OF APPROVAL 5

BNFL shall modify the ISMP to provide a description of their plans to implement defense in depth. (ISMP Evaluation Report Section 3.2.2.1, “Defense-in-Depth”; see also DOE/RL-98-09).

Action Required to Meet Condition of Approval - Revise Section 3.1 of the ISMP to provide adequate implementing detail for the six sub-principles of defense in depth.

Summary of BNFL Response

BNFL submitted an Implementing Standard for Defense in Depth that provides implementing detail for the six sub-principles specified in the *Top-Level Safety Standards and Principles*.

This standard provides sufficient detail for a user (e.g., design engineer) to successfully implement the Top-Level Principle of Defense in Depth. The implementing standard provides standards on implementing the six principles of Defense in Depth. For example, the general guidance on the first principle, defense in depth (i.e., redundancy, and diversity), points to other Codes of Practice on Dependent Failure Monitoring and Minimizing Dependent Failures.

The new implementing standard and its associated Code of Practice and procedure(s) will provide detailed guidance on determining whether the number of active and passive engineered barriers (SSCs) and associated engineering requirements specified for the control of hazards of a particular severity level provide adequate safety.

Evaluation

The evaluation of the adequacy of the Defense in Depth Implementing Standard is provided in *the DOE Regulatory Unit Evaluation of BNFL Inc. Safety Requirements Document, Revision 1A*, RL/REG-98-20, Revision 1, November 1998. The RU reviewers determined that revisions made to Section 3.1.1 and 3.1.2 of the ISMP in conjunction with revising the Safety Requirements Document to include an implementing standard for defense in depth was acceptable to resolve this condition for approval.

1.6 CONDITION OF APPROVAL 6

BNFL shall revise the ISMP to either (1) indicate that BNFL Inc. accepts ultimate responsibility for safety, or (2) clarify that the General Manager's ultimate responsibility for safety is equivalent to the Contractor's responsibility (ISMP Evaluation Report Section 3.2.2.2, "Safety Responsibility" and Section 3.2.3.1.3, "Process Safety Responsibility").

Evaluation – This condition of approval was met in ISMP Revision 3 as documented in *DOE Regulatory Unit Evaluation of BNFL Inc. Integrated Safety Management Plan, Revision 3*, RL/REG- 98-19 August 31, 1998.

2.0 EVALUATION OF CHANGES INTENDED TO MEET PREVIOUS ISMP COMMITMENTS

The following subsections provide evaluations of ISMP Revision 3A implementation of a variety of BNFL commitments made during the review of ISMP Revisions 0, 2¹⁰, and 3. If the resolution of the commitment remains unacceptable the rationale is explained. The subsections are presented by ISMP-related section. Prior to commencement of preliminary design, BNFL must meet the remaining commitments.

2.1 ISMP SECTION 1 – SAFETY APPROACH TO TWRS PRIVATIZATION

- a. Acceptable Level of Public Safety (Section 1.3.7)

Required Action

BNFL must provide adequate justification to support the dose values for Control Room Personnel.

¹⁰ Revision 1 was not separately reviewed, but was subsumed in the Review of Revision 2.

Summary of BNFL Response

BNFL revised ISMP Revision 0, page 1-12 (Section 1.3.7) to utilize the correct terminology. The revised ISMP Revision 3A paragraph, with highlighted word changes states:

“If credit is taken for operator action to satisfy the public radiological exposure standards of Table 1-2, adequate radiation protection is provided to permit access and occupancy of the control room or other control locations under accident conditions without personnel receiving radiation doses in excess of 5 rem TEDE and 30 rem beta skin for the duration of the accident.”

Evaluation

The RU reviewers determined that this revision was adequate to meet the previous commitment because BNFL provided sufficient justification to support the dose values selected for Control Room personnel.

- b. Configuration Management (Section 1.3.16)

Required Action

BNFL must modify paragraph 3) to identify the approval authority for changes to Safety Design Significant features.

Summary of BNFL Response

BNFL revised ISMP page 1-28 to reference important to safety features as follows:

“During design and construction, the Project Manager approves changes to Important to Safety [vs. Safety Design Class] features.”

Evaluation

The RU reviewers determined that this revision was adequate to meet the previous commitment.

2.2 ISMP SECTION 3 – CONFORMANCE TO TOP-LEVEL SAFETY STANDARDS AND PRINCIPLES

- a. Defense in Depth (Section 3.1)

Required Action

BNFL must revise the ISMP to provide adequate implementing detail. The detail must present clear, concise implementing safety standards so that the end user can effectively and unambiguously implement the Top-Level Principles of Defense in Depth.

Summary of BNFL Response

See Condition of Approval 5 in this Appendix.

Evaluation

The RU reviewers determined that this revision was adequate to meet the previous commitment.

b. Quality Assurance (QA) Program (Section 3.3.1.5)

1. ISMP and QA Program Implementation Plan (QAPIP) Inconsistency

Required Action

Revise the ISMP to be consistent with the QAPIP.

Summary of BNFL Response

BNFL revised ISMP Section 3.3.1.5 (page 3-8) to utilize the same wording as that found in the QAP Revision 4.

Evaluation

The RU reviewers determined that this revision was adequate to meet the previous commitment.

2. Application of DOE/RW-0333P to HLW Services

Required Action

BNFL must, prior to commencing preliminary design, revise the wording of Section 3.3.1.5 and/or Section 3.5 to clearly state that the TWRS-P Project will apply DOE/RW-0333P to all activities associated with high-level waste services from design through production and acceptance.

Summary of BNFL Response

See Condition of Approval 1, Required Action 1).

Evaluation

The RU reviewers determined that this revision was adequate to meet the previous commitment.

c. Changes to the Authorization Basis (Section 3.3.3)

1. RU Review of Changes to the QA Program Implementation Plan

Required Action

BNFL must, prior to commencing preliminary design, edit ISMP Revision 3 as follows:

“By 10 CFR 830.120(b)(3), a contractor may, at any time, make changes to the approved QAP so long as the QAP, as changed, will continue to satisfy the requirements of 10 CFR 830.120. For the TWRS-P Project the commitment has been made that changes to a previously approved QAP will be submitted to the RU for review and approval 30 days prior to the implementation of the subject changes. Annual updates to the QAP must identify the changes, the pages affected, the reason for the changes, and the basis for concluding that the revised QAP continues to satisfy the requirements of 10 CFR 830.120.”

BNFL must, prior to commencing preliminary design, revise Section 3.3.3.1 and 3.3.3.2 to restate or specifically reference the tighter controls over the RU approval of changes to the QAP contained in the second paragraph of Section 3.3.3.

Summary of BNFL Response

BNFL deleted ISMP Sections 3.3.3.1 and 3.3.3.2.

Evaluation

The RU reviewers determined that this revision was adequate to meet the previous commitment.

2. Changes Prior to Issuance of the Operating Authorization (Section 3.3.3.1)

Required Action

BNFL must, prior to commencing preliminary design, revise the ISMP to describe a management process for implementing BNFL-initiated changes to the Authorization Basis that is consistent with DOE/RL-97-13.

Summary of BNFL Response

BNFL deleted ISMP Section 3.3.3.1.

Evaluation

The RU reviewers determined that this revision was adequate to meet the previous commitment.

2.3 ISMP SECTION 9 – SCHEDULING OF SAFETY-RELATED ACTIVITIES

a. Scheduling of Safety-Related Activities (Section 9.1)

Required Action

BNFL must, prior to commencing preliminary design, incorporate a schedule in the ISMP that includes specific dates for safety deliverables up to and including Authorization for Deactivation.

Summary of BNFL Response

BNFL provided the dates required by issuance of a letter that is referenced in ISMP Revision 3. (Section 9.1). Also, Section 9.2 will be revised to reflect submittal of the QAP as part of the Standards Approval Package.

Evaluation

The RU reviewers determined that this revision was adequate to meet the previous commitment.

2.4 ISMP SECTION 10 – ASSESSMENTS

a. Support of the RU's Inspection and Corrective Action/Enforcement Action Programs (Section 10.4)

Required Action

BNFL must, prior to commencing preliminary design, revise the wording of this section to delete the restrictions on the number of RU inspectors per visit and the number of RU inspections per year.

Summary of BNFL Response

BNFL revised ISMP Section 10.4 (page 10-3) to read:

“Consistent with the nature of the fixed-price contract, the RU inspection program is executed in a planned, disciplined, and predictable manner.” [delete “...that includes a defined number of inspectors per visit and the number of inspections per year.”]

Evaluation

The RU reviewers determined that this revision was adequate to meet the previous commitment.

2.5 ISMP SECTION 11 – ORGANIZATION ROLES, RESPONSIBILITIES AND AUTHORITIES

a. Organization Roles, Responsibilities and Authorities (Section 11.0)

Required Action

BNFL must, prior to commencing preliminary design, modify the ISMP to define the roles, responsibilities, and authorities for the ERPP.

Summary of BNFL Response

BNFL revised ISMP Section 11.1 (page 11-5) to insert item 12 under “Licensing, Permitting, and Safety” to read:

12) Developing and implementing the Environmental Radiation Protection Program”

Evaluation

The RU reviewers determined that this revision was adequate to meet the previous commitment.

3.0 COMMENTS

BNFL responded to each of the Comments cited in Section 4.0 of the main body of this document. Resolution of these comments is not viewed by the RU as required for approval of the ISMP. Nonetheless, each BNFL response and RU evaluation of the response are included in this Section for completeness.

Comment

Table 1-3: First Bullet, “Remarks” Column Under “3. Quality Improvement: “(QL)-3” should be “QL-3.”

Summary of BNFL Response

BNFL revised ISMP page 1-19 as noted above.

Evaluation

This ISMP revision was acceptable.

Comment

Two Paragraphs Preceding Table 1-4: These two paragraphs (“Personnel responsible for performing . . . are identified in Table 1-4”) were added to Section 1.3.16 of the Revision 3 ISMP but were not marked with change bars in the margin.

Summary of BNFL Response

BNFL revised ISMP page 1-28 by adding change bars in the margin as needed.

Evaluation

This ISMP revision was acceptable.

Comment

Section 1.3.18: Add “the emergency management plan is fully implemented before the introduction of hazardous chemicals into the TWRS-P Facility.”

Summary of BNFL Response

BNFL revised ISMP Section 1.3.18, page 1-29 to read:

“The emergency management plan is fully implemented before radioactive wastes or hazardous chemicals are introduced into the facility.”

Evaluation

This ISMP revision was acceptable.

Comment

First Paragraph of Section 2.5: Delete the comma after training of the first paragraph of Section 2.5 (i.e., “. . . contained within the regulation, training, and procedures will” should be “. . . contained within the regulation, training and procedures will . . .”).

Summary of BNFL Response

BNFL revised ISMP page 2-6

Evaluation

This ISMP revision was acceptable.

Comment

Section 3.3.1.4: There is a typographical error. Reference to Safety Criterion 9.0-3 should be revised to 9.2-3.

Summary of BNFL Response

BNFL revised ISMP page 3-8 to correct the typographical error.

Evaluation

This ISMP revision was acceptable.

Comment

Third Paragraph of Section 3.3.3: It seems as though several words are missing as follows: “As allowed by 10 CFR 835.101(I) BNFL Inc. may make changes to the approved RPP so long as the change...”

Summary of BNFL Response

BNFL revised ISMP page 3-10 as recommended.

Evaluation

This revision to the ISMP was acceptable.

Comment

Last Paragraph of Section 3.6.3: The last paragraph of Section 3.6.3 states: “A specific list of SSCs credited for worker and public protection is provided in ISAR Section 4.8, ‘Controls for the Prevention and Mitigation of Accidents.’” The development and refinement of this list is an iterative process rather than a single step process. BNFL should state the frequency or selected milestone points for revision of this list of SSCs.

Summary of BNFL Response

BNFL revised ISMP page 3-17 and page 5-5. Following the last paragraph of Section 3.6 (page 3-17), BNFL added the sentence:

“These SSCs are identified in the Master Equipment List which is maintained by the Configuration Management Program as discussed in ISMP Section 5.3, “Configuration Management.”

In Section 5.3 (page 5-5) BNFL modified item 2) of the list of items and added item 11) as follows:

2) The impact of the proposed change on the authorization basis [i.e., RL/REG-97-13 (DO-RL 1997b)]

11) Necessary changes to the Master equipment list.

Evaluation

These revisions to the ISMP were acceptable.

Comment

Paragraph 5 of Section 3.12: The last two words appearing in paragraph 5, "complete safety" should be revised to read "completed safely."

Summary of BNFL Response

BNFL revised ISMP page 3-28 as recommended.

Evaluation

This revision to the ISMP was acceptable.

Comment

Section 3.16.1.2: Section 3.16.1.2 states in part: "The PSC is also responsible for the reviewing and recommending approval to the General Manager for the following safety related documents: ... 7) Audit and assessment reports." To ensure adequate independence of BNFL's oversight groups, reports of audits and assessments conducted by the TWRS-P QA/other organizations should not be dependent upon review by the PSC or approval by the General Manager.

Summary of BNFL Response

BNFL revised ISMP page 3-36, item 7) to read:

7) "The PSC reviews audit and assessment reports and recommends actions."

Evaluation

This revision to the ISMP was acceptable.

Comment

Section 5.1: Delete 'highly' in phrase "highly hazardous chemicals"

Summary of BNFL Response

BNFL revised ISMP page 5-1 as recommended.

Evaluation

The BNFL response is acceptable.

Comment

Section 5.6.4: It seems as though a word is missing from the first sentence as follows: "Prior to operation of the TWRS-P Facility with radioactive materials and chemicals considered to pose a

hazard, startup tests...”

Summary of BNFL Response

BNFL revised ISMP page 5-9 as recommended.

Evaluation

This revision to the ISMP was acceptable.

Comment

Section 5.6.8: The correct call out for the regulation entitled “Employee Emergency Plans and Fire Protection” is 29 CFR 1910.38 (not 29 CFR 1910.119).

Summary of BNFL Response

BNFL revised ISMP page 5-12 as recommended.

Evaluation

This revision to the ISMP was acceptable.

Comment

Section 8.0: The first paragraph in Chapter 8.0 refers to BNFL 1997a, *Tank Waste System Privatization Project Quality Assurance Program*. This document has been superseded by BNFL 1998c, *TWRS-P Privatization Project: Quality Assurance Program and Implementation Plan*, and the reference must be changed accordingly before the start of Part B.

Summary of BNFL Response

BNFL revised pages 8-1 and 2-7 as recommended and performed a “word search” to correct any other references to the QAP.

Evaluation

This revision to the ISMP was acceptable.

Comment

Section 9.2: Change “are” to “will be” in the third paragraph of Section 9.2 (i.e., “Revisions to the Quality Assurance Program and its implementation plan ~~are~~ will be submitted to the RU 60 days before the beginning of construction, operation, and deactivation.”)

Summary of BNFL Response

BNFL revised ISMP page 9-1 as recommended.

Evaluation

This revision to the ISMP was acceptable.

Comment

Definitions: The definition of “requirements” within the Revision 3 ISMP has a typographical error in that “stature” should be “statute.

Summary of BNFL Response

BNFL revised ISMP page 12-7 to correct the typographical error.

Evaluation

This revision to the ISMP was acceptable.